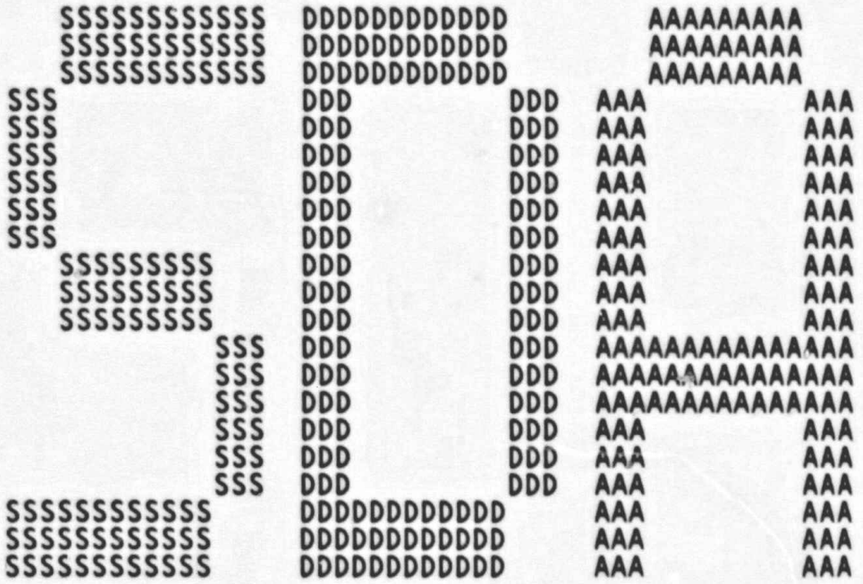
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SSSSSSSSSSS DDDDDDDDDDD AAAAAAAAA
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SSS DDD DDD AAA AAA
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SSSSSSSSS DDD DDD AAA AAA
SSSSSSSSS DDD DDD AAA AAA
SSSSSSSSS DDD DDD AAA AAA
SSS DDD DDD AAAAAAAAAAAAAAA
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SSS DDD DDD AAAAAAAAAAAAAAA
SSS DDD DDD AAA AAA
SSS DDD DDD AAA AAA
SSS DDD DDD AAA AAA
SSSSSSSSSSS DDDDDDDDDDD AAA AAA
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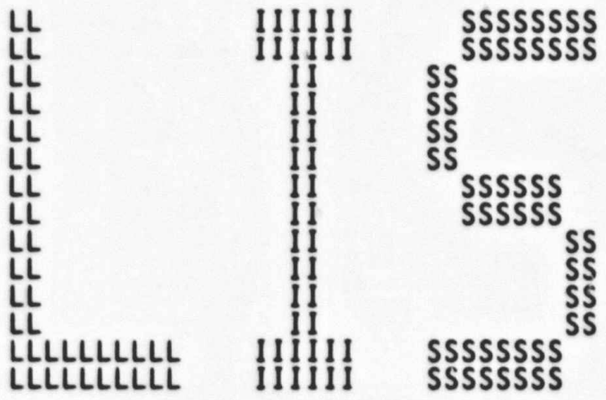
SSSSSSSSSSS DDDDDDDDDDD AAA AAA

FILEID**INDEX



N 3

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```
0000     1          .TITLE  INDEX   TABLE OF CONTENTS FOR LISTING
0000     2          .SBTTL  COPYRIGHT NOTICE
0000     3          .IDENT  'V04-000'
0000     4 ;
0000     5 ;*****************************************************************************
0000     6 ;*                                                                           *
0000     7 ;*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                                  *
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0000    21 ;*                                                                           *
0000    22 ;*  DIGITAL ASSUMES NO RESPONSIBILITY FOR THE USE  OR  RELIABILITY OF ITS    *
0000    23 ;*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.                  *
0000    24 ;*                                                                           *
0000    25 ;*                                                                           *
0000    26 ;*****************************************************************************
0000    27 ;
```

```
0000     29          .SBTTL  PROGRAM DESCRIPTION
0000     30 ;++
0000     31 ;   FACILITY
0000     32 ;
0000     33 ;       SYSTEM DUMP ANALYZER
0000     34 ;
0000     35 ;   ABSTRACT
0000     36 ;
0000     37 ;       LISTING TABLE OF CONTENTS
0000     38 ;
0000     39 ;   ENVIRONMENT
0000     40 ;
0000     41 ;       NATIVE MODE, USER MODE
0000     42 ;
0000     43 ;   AUTHOR
0000     44 ;
0000     45 ;       TIM HALVORSEN, JULY 1978
0000     46 ;
0000     47 ;   MODIFIED BY
0000     48 ;
0000     49 ;       V002    KEK0004         K. E. Kinnear   30-July-1981
0000     50 ;               Change default addressing mode to longword.
0000     51 ;
0000     52 ;       V001    MTR0001         Mike Rhodes     22-Jun-1981
0000     53 ;               Remove references to $SDAMSGDEF macro.
0000     54 ;
0000     55 ;--
```

```
                        0000     58          .SBTTL  DECLARATIONS
                        0000     59 ;
                        0000     60 ;       SYMBOL DEFINITIONS
                        0000     61 ;
                        0000     62          $FABDEF                         ; FILE ACCESS BLOCK (FAB)
                        0000     63          $RABDEF                         ; RECORD ACCESS BLOCK (RAB)
                        0000     64
0000002D                0000     65 MAX_HEADINGS = 45                        ; MAX. 45 HEADINGS
00000036                0000     66 HEADING_SIZE = 54                        ; LENGTH OF EACH SLOT
                        0000     67 ;   EACH ASCIC HEADING IS PRECEEDED BY A LONGWORD PAGE NUMBER.
```

```
                        0000     69          .SBTTL  STORAGE DEFINITIONS
                        0000     70 ;
                        0000     71 ;       STORAGE DEFINITIONS
                        0000     72 ;
                        0000     73
                00000000 0000    74          .PSECT  SDADATA,NOEXE,WRT
                        0000     75
                        0000     76 INDEX_RFA:
00000006                0000     77          .BLKW   3                       ; RFA OF DUMMY INDEX
                        0006     78
                        0006     79 CUR_HEADING::
FFFFFFFF                0006     80          .LONG   -1                      ; CURRENT HEADING NUMBER
                        000A     81
                        000A     82 SUB_HEADING::
00000012                000A     83          .BLKL   2                       ; DESCRIPTOR OF CURRENT HEADING
                        0012     84
                        0012     85 HEADING_ROUTINE::
00000016                0012     86          .BLKL   1                       ; ADDRESS OF HEADING ROUTINE
                        0016     87
                        0016     88 HEADINGS:
FFFFFFFF                0016     89          .LONG   -1                      ; ADDRESS OF HEADINGS BUFFER
                        001A     90
                00000000 0000    91          .PSECT  INDEX,EXE,NOWRT
                        0000     92
                        0000     93          .DEFAULT DISPLACEMENT,LONG
```

```
                     0000     95          .SBTTL  READ-ONLY DATA DEFINITIONS
                     0000     96
                     0000     97 ;
                     0000     98 ;       READ-ONLY DATA DEFINITIONS
                     0000     99 ;
                     0000    100
                     0000    101 INDEXCTL1:
                     0000    102          STRING  <!38* !32AC ....!4UL>
00000050             001B    103 LINE_LENGTH = 1+79                          ; MAXIMUM LENGTH OF EACH LINE
```

```
                                001B   105          .SBTTL  DUMMY_INDEX -- PRINT DUMMY TABLE OF CONTENTS
                                001B   106 ;---
                                001B   107 ;
                                001B   108 ;       DUMMY_INDEX
                                001B   109 ;
                                001B   110 ;       THIS ROUTINE PRINTS A PAGE FULL OF EMPTY RECORDS
                                001B   111 ;       TO THE LISTING FILE TO BE LATER WRITTEN OVER WHEN
                                001B   112 ;       THE TABLE OF CONTENTS BECOMES AVAILABLE.
                                001B   113 ;
                                001B   114 ;   INPUTS:
                                001B   115 ;
                                001B   116 ;       NONE
                                001B   117 ;
                                001B   118 ;   OUTPUTS:
                                001B   119 ;
                                001B   120 ;       NONE
                                001B   121 ;
                                001B   122 ;---
                                001B   123
                                001B   124 DUMMY_INDEX::
                        000C    001B   125          .WORD   ^M<R2,R3>
                                001D   126
             00000000'EF   D4   001D   127          CLRL    PAGE_NUMBER                 ; RESET PAGE NUMBER
        00000006'EF    01   CE  0023   128          MNEGL   #1,COR_HEADING  ; RESET HEADING INDEX
             0000000A'EF   7C   002A   129          CLRQ    SUB_HEADING                 ; AND CLEAR ANY SUBHEADING
                                0030   130          SKIP    PAGE
                                0037   131          SKIP    3
                                0040   132          PRINT   0,<!35* !15* Table of Contents>
                                004D   133          PRINT   0,<!35* !15* ------------------>
                                005A   134          SKIP    2
53   00000000'EF    DE          0063   135          MOVAL   LIST,R3
  22 A3    0050    8F   B0     006A   136          MOVW    #LINE_LENGTH,RAB$W_RSZ(R3)
00000000'EF      00   FB       0070   137          CALLS   #0,PUT_LINE                 ; OUTPUT DUMMY RECORD
50   00000000'EF    9E          0077   138          MOVAB   INDEX_RFA,R0
       80    10    A3   D0     007E   139          MOVL    RAB$W_RFA(R3),(R0)+         ; SAVE CURRENT POSITION
       60    14    A3   B0     0082   140          MOVW    RAB$W_RFA+4(R3),(R0)
          52       2C   D0     0086   141          MOVL    #MAX_READINGS-1,R2          ; ITERATION COUNT
                                0089   142 10$:
  22 A3    0050    8F   B0     0089   143          MOVW    #LINE_LENGTH,RAB$W_RSZ(R3)
00000000'EF      00   FB       008F   144          CALLS   #0,PUT_LINE                 ; OUTPUT RECORD
             F0 52    F5       0096   145          SOBGTR  R2,10$                      ; LOOP UNTIL DONE
                      04       0099   146          RET
```

```
                                009A   148          .SBTTL  PRINT_INDEX -- PRINT TABLE OF CONTENTS PAGE
                                009A   149 ;---
                                009A   150 ;
                                009A   151 ;       PRINT_INDEX
                                009A   152 ;
                                009A   153 ;       THIS ROUTINE OVERWRITES THE PREVIOUSLY OUTPUT DUMMY
                                009A   154 ;       RECORDS WITH THE TABLE OF CONTENTS LISTING AND ZERO
                                009A   155 ;       THE REMAINING RECORDS.
                                009A   156 ;
                                009A   157 ;   INPUTS:
                                009A   158 ;
                                009A   159 ;       HEADINGS HOLDS THE LIST OF SUB_HEADINGS AND PAGE NUMBERS
                                009A   160 ;
                                009A   161 ;   OUTPUTS:
                                009A   162 ;
                                009A   163 ;       NONE
                                009A   164 ;
                                009A   165 ;---
                                009A   166
                                009A   167 PRINT_INDEX::
                        000C    009A   168          .WORD   ^M<R2,R3>
                                009C   169
     53  00000000'EF    DE      009C   170          MOVAL   LIST,R3
     50  00000000'EF    9E      00A3   171          MOVAB   INDEX_RFA,R0
       10 A3    80     D0      00AA   172          MOVL    (R0)+,RAB$W_RFA(R3)     ; RESET CURRENT POSITION
       14 A3    60     B0      00AE   173          MOVW    (R0),RAB$W_RFA+4(R3)
       1E A3    02     90      00B2   174          MOVB    #RAB$C_RFA,RAB$B_RAC(R3)  ; SHIFT TO RANDOM ACCESS
                               00B6   175          $FIND   (R3)                    ; LOCATE FIRST DUMMY LINE
                               00BF   176          SIGNAL  RMS,(R3)
       1E A3    00     90      00D1   177          MOVB    #RAB$C_SEQ,RAB$B_RAC(R3)  ; BACK TO SEQUENTIAL ACCESS
                 52     D4      00D5   178          CLRL    R2                      ; CURRENT SUB_HEADING INDEX
     00000006'EF    D5      00D7   179          TSTL    CUR_HEADING             ; ANY HEADINGS?
                 01     18      00DD   180          BGEQ    10$                     ; BRANCH IF SO
                        04      00DF   181          RET
                               00E0   182 10$:
                               00E0   183          $GET    (R3)
                               00E9   184          SIGNAL  RMS,(R3)
        50    36    52     C5      00FB   185          MULL3   R2,#HEADING_SIZE,R0     ; OFFSET TO SLOT
     51  00000016'FF40     9E      00FF   186          MOVAB   @HEADINGS[R0],R1        ; ADDRESS OF SLOT
                 81     DD      0107   187          PUSHL   (R1)+                   ; PAGE NUMBER
                 61     9F      0109   188          PUSHAB  (R1)                    ; ADDRESS OF ASCIC STRING
           00000000'EF  7F      010B   189          PUSHAQ  LINE_DESCR              ; BUFFER DESCRIPTOR
                 00     DD      0111   190          PUSHL   #0                      ; RESULT STRING LENGTH
             FEE9 CF    9F      0113   191          PUSHAB  INDEXCTL1               ; CONTROL STRING
     00000000'GF    05     FB      0117   192          CALLS   #5,G^SYS$FAO            ; FORMAT STRING
                               011E   193          $UPDATE (R3)
                               0127   194          SIGNAL  RMS,(R3)
                 52     D6      0139   195          INCL    R2                      ; INCREMENT HEADING NUMBER
     00000006'EF    52     D1      013B   196          CMPL    R2,CUR_HEADING  ; CHECK IF LAST HEADING
                 9C     15      0142   197          BLEQ    10$                     ; CONTINUE UNTIL DONE
                        04      0144   198          RET
```

```
                                0145   200          .SBTTL  SET_HEADING -- SET A NEW PAGE HEADING
                                0145   201 ;---
                                0145   202 ;
                                0145   203 ;       SET_HEADING
                                0145   204 ;
                                0145   205 ;       THIS ROUTINE ACCEPTS THE DESCRIPTOR OF A STRING AND
                                0145   206 ;       SAVES THE SUB-HEADING IN THE HEADING ARRAY TO BE USED
                                0145   207 ;       FOR THE INDEX.
                                0145   208 ;
                                0145   209 ;   INPUTS:
                                0145   210 ;
                                0145   211 ;       4(AP) = ADDRESS OF STRING DESCRIPTOR OF HEADING
                                0145   212 ;
                                0145   213 ;   OUTPUTS:
                                0145   214 ;
                                0145   215 ;       NONE
                                0145   216 ;
                                0145   217 ;---
                                0145   218
                                0145   219 SET_HEADING::
                        003C    0145   220          .WORD   ^M<R2,R3,R4,R5>
                                0147   221
            00000016'EF   D5    0147   222          TSTL    HEADINGS                    ; SEE IF STORAGE ALLOCATED YET
                          14    014D   223          BGTR    5$                          ; BRANCH IF OK
                0000097E  8F    014F   224          PUSHL   #MAX_HEADINGS*HEADING_SIZE ; LENGTH OF HEADING BUFFER
      00000000'EF       01    FB 0155   225          CALLS   #1,ALLOCATE                 ; ALLOCATE STORAGE
      00000016'EF       51    D0 015C   226          MOVL    R1,HEADINGS                 ; SAVE ADDRESS OF BUFFER
                                0163   227 5$:
      52    0000000A'EF   9E    0163   228          MOVAB   SUB_HEADING,R2
      53    00000006'EF   9E    016A   229          MOVAB   CUR_HEADING,R3
            00000012'EF   D4    0171   230          CLRL    HEADING_ROUTINE             ; NO HEADING ROUTINE BY DEFAULT
             62    04     BC   7D 0177   231          MOVQ    @4(AP),(R2)                 ; SET NEW HEADING
                   2D     63   D1 017B   232          CMPL    (R3),#MAX_HEADINGS          ; CHECK IF ENOUGH ROOM
                          01   19 017E   233          BLSS    10$                         ; IF STILL ROOM TO STORE
                               04 0180   234          RET
                                0181   235 10$:
                               63   D6 0181   236          INCL    (R3)                        ; INCREMENT HEADING NUMBER
                50     36     63   C5 0183   237          MULL3   (R3),#HEADING_SIZE,R0       ; OFFSET TO SLOT
          51    00000016'FF40   9E 0187   238          MOVAB   @HEADINGS[R0],R1            ; ADDRESS OF SLOT
    81    01    00000000'EF     C1 018F   239          ADDL3   PAGE_NUMBER,#1,(R1)+        ; STORE PAGE NUMBER
                      81     62   90 0197   240          MOVB    (R2),(R1)+                  ; STORE LENGTH
            61    04 B2    62   28 019A   241          MOVC3   (R2),@4(R2),(R1)            ; STORE STRING
                               04 019F   242          RET
```

01A0 244
01A0 245 .END

```
$$.TMP1                         = 00000001
$$.TMP2                         = 00000063
ALLOCATE                          ********    X   03
CUR_HEADING                       00000006 RG     02
DUMMY_INDEX                       0000001B RG     03
FAB$L_STV                       = 0000000C
HEADINGS                          00000016 R      02
HEADING_ROUTINE                   00000012 RG     02
HEADING_SIZE                    = 00000036
INDEXCTL1                         00000000 R      03
INDEX_RFA                         00000000 R      02
LIB$SIGNAL                        ********    X   03
LINE_DESCR                        ********    X   03
LINE_LENGTH                     = 00000050
LIST                              ********    X   03
MAX_HEADINGS                    = 0000002D
NEW_PAGE                          ********    X   03
PAGE_NUMBER                       ********    X   03
PRINT                             ********    X   03
PRINT_INDEX                       0000009A RG     03
PUT_LINE                          ********    X   03
RAB$B_RAC                       = 0000001E
RAB$C_RFA                       = 00000002
RAB$C_SEQ                       = 00000000
RAB$W_RFA                       = 00000010
RAB$W_RSZ                       = 00000022
SET_HEADING                       00000145 RG     03
SKIP_LINES                        ********    X   03
SUB_HEADING                       0000000A RG     02
SYS$FAO                           ********    X   03
SYS$FIND                          ********   GX   03
SYS$GET                           ********   GX   03
SYS$UPDATE                        ********   GX   03
```

Psect synopsis

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
ABS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
SDADATA	0000001A (26.)	02 (2.)	NOPIC USR CON REL LCL NOSHR NOEXE RD WRT NOVEC BYTE
INDEX	000001A0 (416.)	03 (3.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC BYTE
LITERALS	00000046 (70.)	04 (4.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC BYTE

Performance indicators

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.04	00:00:00.54
Command processing	110	00:00:00.41	00:00:02.64
Pass 1	188	00:00:02.60	00:00:09.27
Symbol table sort	0	00:00:00.22	00:00:02.10
Pass 2	57	00:00:00.61	00:00:02.71

Symbol table output	5	00:00:00.03	00:00:00.04
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	393	00:00:03.93	00:00:17.31

The working set limit was 1350 pages.
20609 bytes (41 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 326 non-local and 9 local symbols.
245 source lines were read in Pass 1, producing 18 object records in Pass 2.
18 pages of virtual memory were used to define 16 macros.

+----------------------------+
! Macro library statistics !
+----------------------------+

Macro library name	Macros defined
_255DUA28:[SDA.OBJ]SDALIB.MLB;1	4
_255DUA28:[SYS.OBJ]LIB.MLB;1	0
_255DUA28:[SYSLIB]STARLET.MLB;2	9
TOTALS (all libraries)	13

456 GETS were required to define 13 macros.

There were no errors, warnings or information messages.

```
MACRO/LIS=LIS$:INDEX/OBJ=OBJ$:INDEX MSRC$:INDEX/UPDATE=(ENH$:INDEX)+EXECML$/LIB+LIB$:SDALIB/LIB
```

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INDEX
LIS

LOCK
LIS

PARSE
LIS